

EXHIBIT E

From: [Thakrar, Reeya](#)
To: [Rodger Smith](#); [Taylor](#); [Flynn, Michael J.](#); [Chambers, Guy W.](#); [Liu, Ellen P.](#); [Colosi, Peter M.](#); [Shen, Nicholas A.](#)
Cc: [HB-Freal](#); [Foster Jr., William S.](#); [DiGiovanni, Francis](#); [Rahmeier, Thatcher](#); [Beyer, Carrie](#); [Silverstein, Brianna L.](#)
Subject: f"real v. Hamilton Beach - Defendants" 4/29 Disclosures
Date: Monday, April 29, 2019 6:57:22 PM
Attachments: [Slocum \(Invalidity\).pdf](#)
[f"real v HBB - Defs 4-29 Exchange.pdf](#)

Counsel:

Pursuant to the PTO in this case and the agreements between the parties, attached please find the list of exhibits and deposition designations for use on Wednesday, 5/1 (time permitting) for the following witnesses:

1. Brian Williams
2. Zachary Waite
3. Dr. Slocum (invalidity)

To enable the parties to fully meet & confer on any objections, please make sure that necessary decision-makers participate in tonight's meet & confer on Plaintiff's behalf.

-Reeya

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f'real Foods, LLC and Rich Products Corporation
v.
Hamilton Beach Brands, Inc. and Hershey Creamery Company

Dr. Alex Slocum

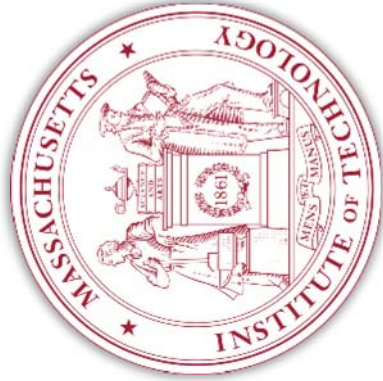
Professor of Mechanical Engineering
Massachusetts Institute of Technology

Patent Invalidity Allegations

Dr. Alex Slocum



- Bachelors in Mechanical Engineering
- Masters in Mechanical Engineering
- Doctorate in Mechanical Engineering



- Walter M. May and A. Hazel May
Professor of Mechanical Engineering
Massachusetts Institute of Technology

Dr. Alex Slocum



Member, National Academy of Engineering



U.S. Department of Commerce Bronze Medal for Superior Federal Service



Assistant Director for Advanced Manufacturing, in the Office of Science and Technology, Office of the President

ASME:



Leonardo daVinci Award



Machine Design Award



Thar Energy Award



Ruth and Joel Spira Outstanding Design Educator Award

TERADYNE

DTX 021

11 R&D 100 awards for “one of the 100 best new technical products of the year”



DDX 10-3

Dr. Alex Slocum



Prolific Author of Technical Articles & Teaching Materials

- Authored two authoritative books on machine design
- 200+ papers in peer reviewed journals and conferences



DTX 021

DDX 10-4

Dr. Alex Slocum



Recent Examples with Industry



- Co-founder OMAX, Inc.
 - Recently released ProtoMax mini waterjet
- Keystone Tower Systems
- Schlumberger “Power Drive Orbit”

Dr. Alex Slocum



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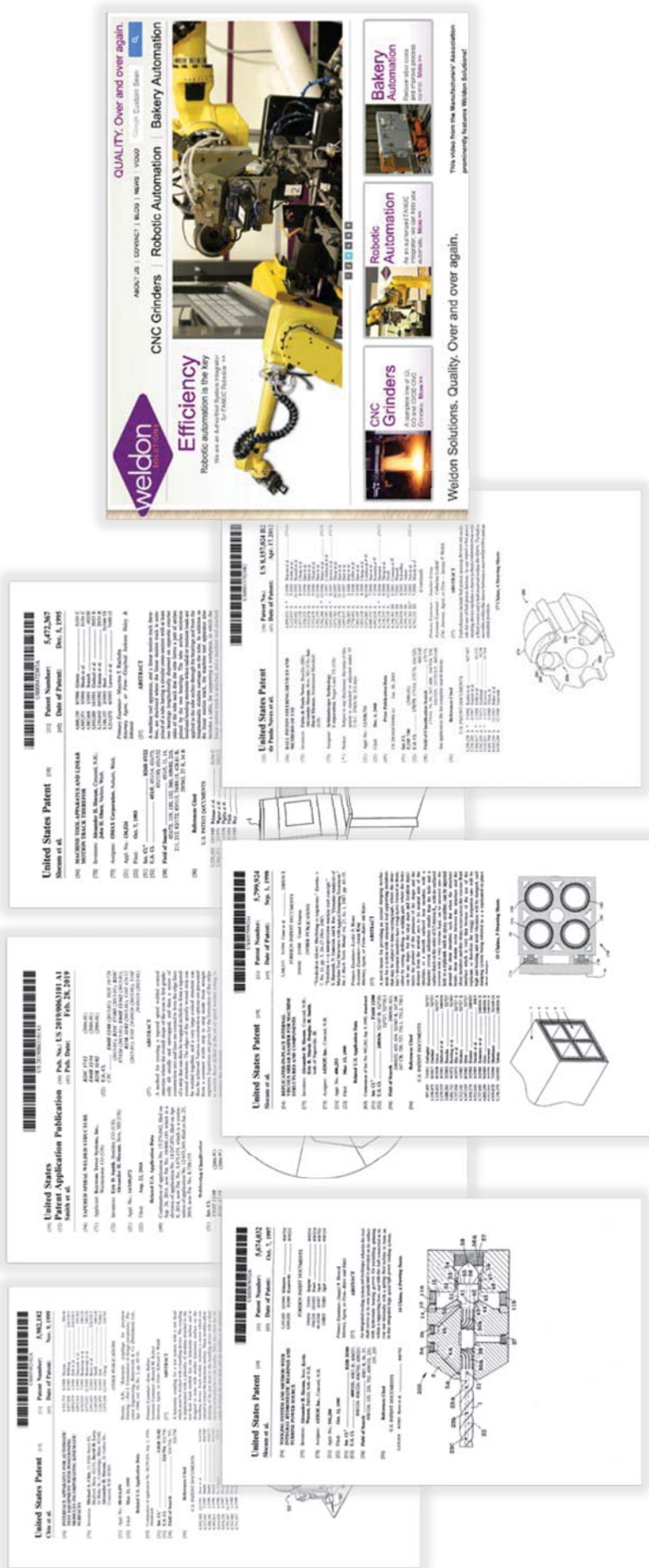


U.S. Patents



11 products have won
R&D 100 Design Awards

Industrialist Academic



DTX 021

DDX 10-6

Invalidity: '377 Patent *Obviousness Due to Tomlinson + Linscott*

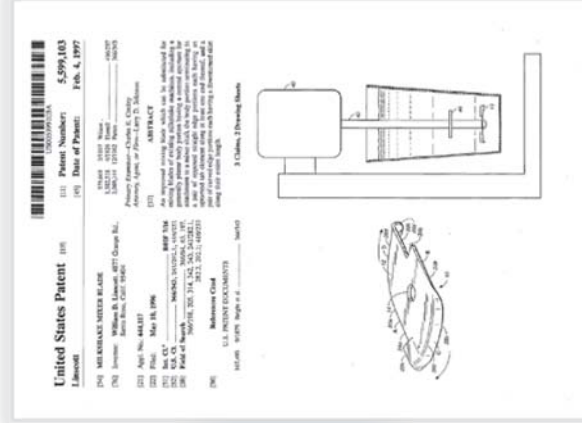
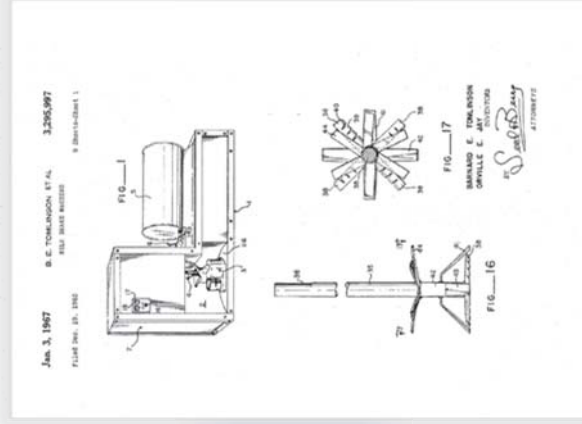
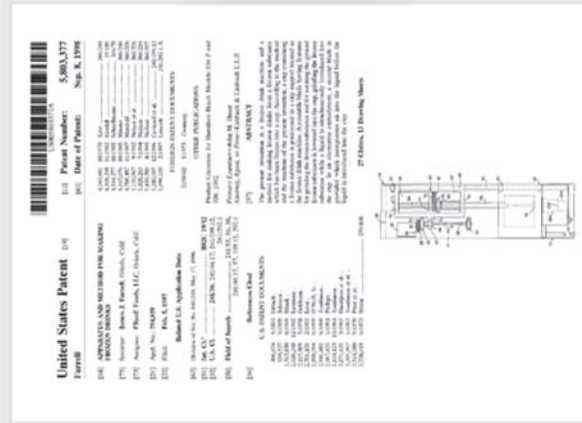
- Invalidity due to obviousness
 - The invention must not have been obvious to a “person of ordinary skill in the art” at the time the invention was made.
 - Person of ordinary skill in the art:
 - a hypothetical person who is presumed to know all reasonably relevant prior art
 - a person of ordinary creativity that can use common sense to solve problems in this field
 - an engineer with at least an undergraduate degree in mechanical engineering or related discipline and at least three years of professional or research experience in the design of consumer or medical products that utilize fluid systems

Invalidity: '377 Patent Obviousness Due to Tomlinson + Linscott

Farrell
U.S. 5,803,377

Tomlinson
U.S. 3,295,997

Linscott
U.S. 5,599,103



Filed Feb. 5, 1997
JTX 001

Prior art:
Issued Jan. 3, 1967
DTX 015

Prior art:
Filed May 10, 1996
Issued Feb. 4, 1997
DTX 007

Invalidity: '377 Patent Obviousness Due to Tomlinson + Linscott

Tomlinson U.S. 3,295,997

Immediately above the blades 38 is a second set of diametrically opposed mixing blades 41. The blades 41 cooperate with a third set of mixing blades 42 to thoroughly mix the milk in the container with the particles of frozen mixture produced by the cutter blades 38. In addition, the blades 42 have vertically extending portions 43 which serve to insure that the frozen mixture is cleared from the sides of the container as the mixer is lowered into the container. Directly above the blades 42, a set of six equally spaced radially extending blades 44 are fixed to the shaft 35. It will also be noted that the blades 44 are given a suitable pitch or twist in such a manner that, when the shaft is rotating in the direction to cut the frozen mixture, the blades 44 act to force the liquid in the container in a downward direction opposite to the upward flow caused by the cutter blades 38 and mixing blades 41. In this manner, the liquid within the container is constantly circulated to obtain an even mixture but is prevented from splashing out of the container by the action of the blades.

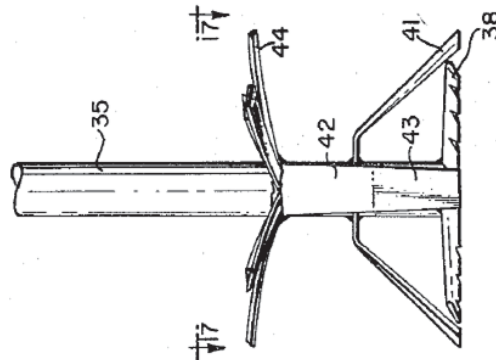


FIG. 16

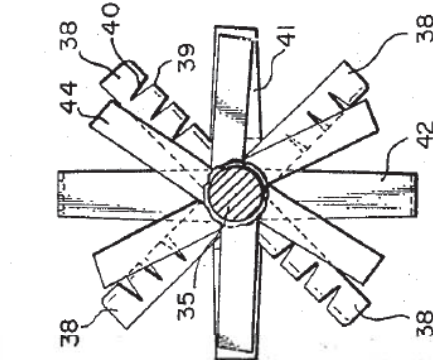


FIG. 17

DTX 015

DTX 015 5:3-22

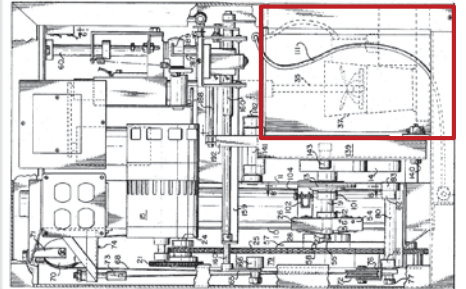
DDX 10-109

Invalidity: '377 Patent Obviousness Due to Tomlinson + Linscott

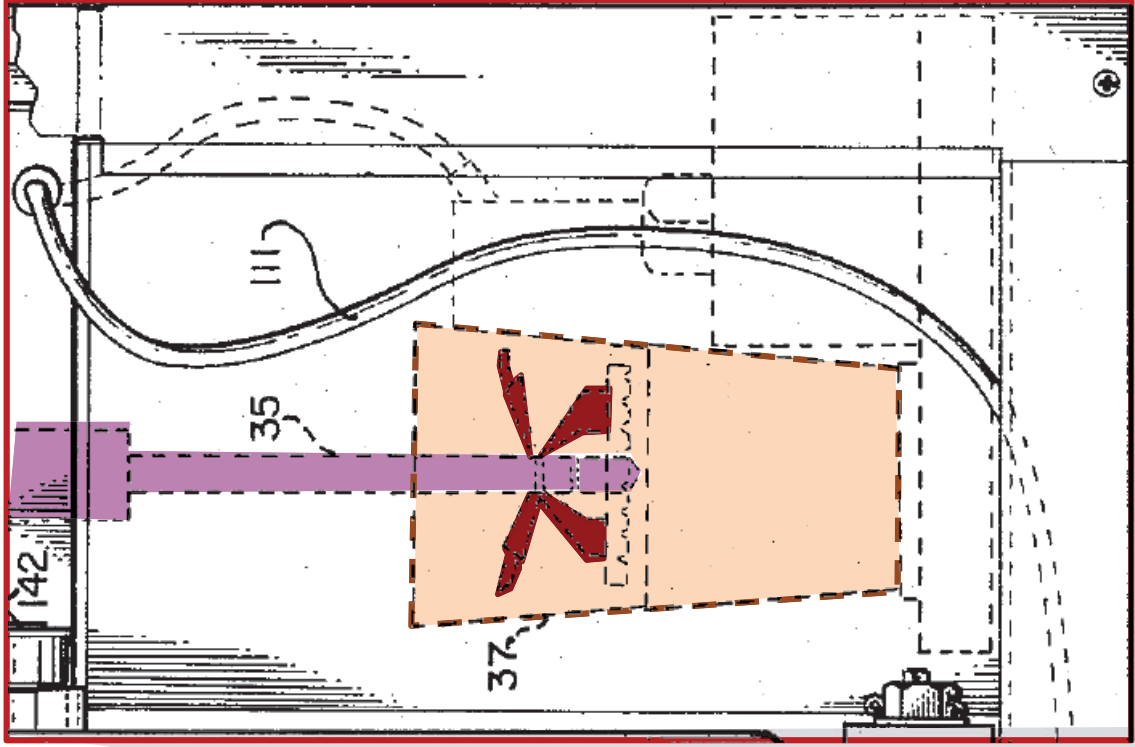
Tomlinson U.S. 3,295,997

The present invention seeks to alleviate these problems by providing a completely automatic mixing apparatus which requires no personal attention in formulating or mixing the ingredients. According to the present invention, all of the milk shake ingredients, except for the milk, are provided in pre-frozen form in the bottom of the container from which the milk shake is to be consumed. It is then necessary only to insert the container with the pre-frozen ingredients into the apparatus. The frozen ingredients are reduced to a very finely divided form by the mixing apparatus and the exact amount of milk desired is added during the operation. At the completion of the various cycles of the mixing machine, the machine is automatically shut off and the completed milk shake may be removed and consumed.

DTX 015, 1: 46-60



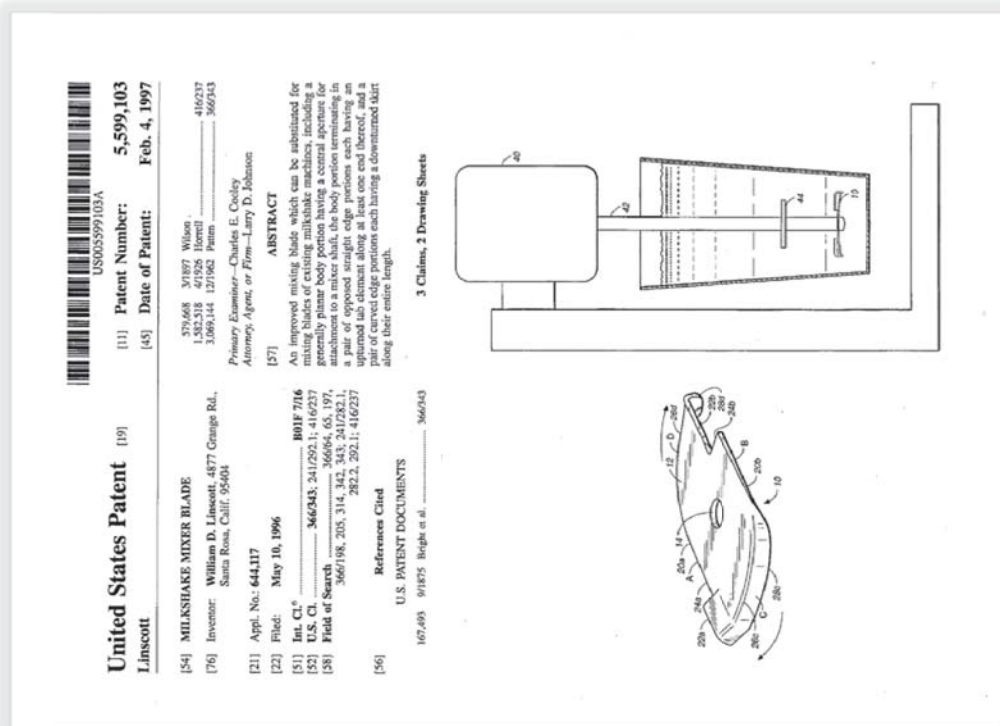
DTX015, Figure 2



DDX 10-110

Invalidity: '377 Patent

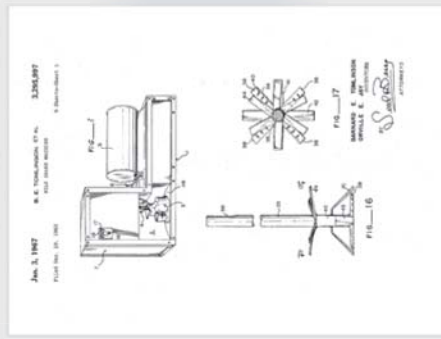
Linscott U.S. 5,599,103



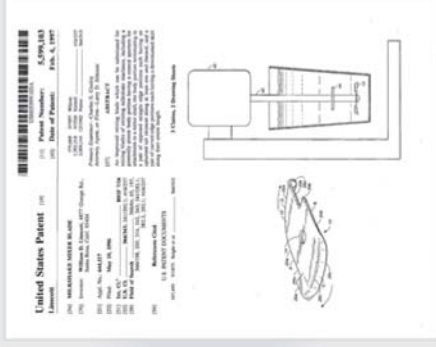
canister wall is deflected circularly upward instead. When the fluid reaches the top of the fluid column, it is sucked radially inward (centripetally) into the vortex created by the whirling blades. Along with entrained air, the fluid then moves downward to the blades, and is thrown outward once again. This vigorous flow pattern, which is made increasingly turbulent by entrained air as the speed of rotation rises, includes the entire liquid volume of the mixing canister, and is responsible for the rapid and thorough blending which is achieved by the present invention. This flow pattern is enhanced by both the up-turned tabs and the down-turned skirts of the inventive blade design.

Invalidity: '377 Patent Obviousness Due to Tomlinson + Linscott

Motivation to Combine Tomlinson and Linscott



DTX 015



DTX 007

The milkshake mixer blade of the present invention provides an improved mixing blade which can easily be substituted for mixing blades of the prior art, thereby converting today's slow, inefficient milkshake machines, requiring constant attention, into highly efficient mixers which can produce a smooth, completely blended milkshake in two minutes or less, with no manual agitation. The inventive

Linscott, DTX 007, 1:40-46

3. A method for improving a milkshake machine, said milkshake machine having a downwardly-dependent motor shaft and at least one mixing blade, said method comprising the steps of:

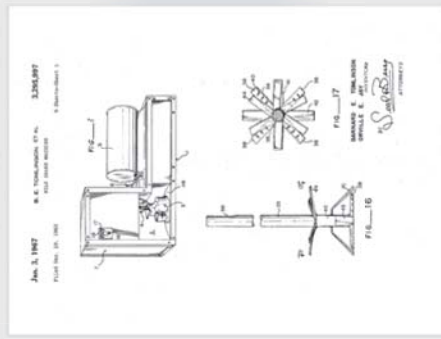
replacing said at least one mixing blade with a mixing blade having a generally planar body portion having a central aperture for attachment to the motor shaft, said body portion terminating in a pair of opposed straight edge portions each having an upturned tab element along an end thereof, and a pair of curved edge portions each having a downturned skirt along their entire length.

Linscott, DTX 007, Claim 3

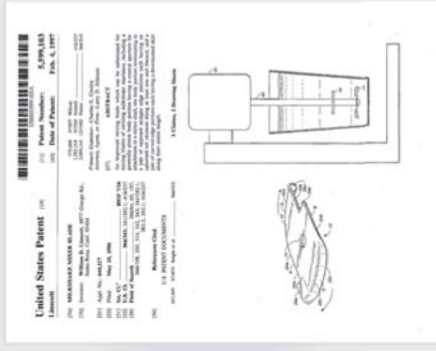
DDX 10-112

Invalidity: '377 Patent *Obviousness Due to Tomlinson + Linscott*

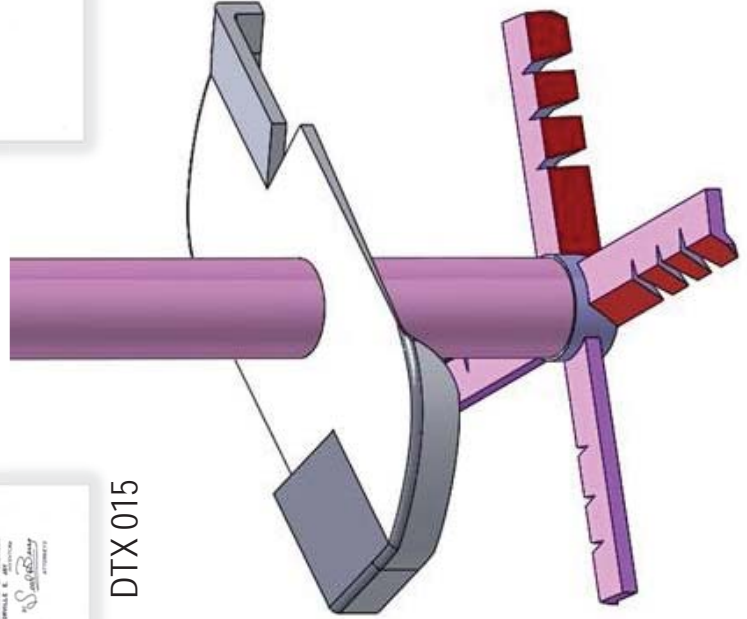
Combined Tomlinson / Linscott Blade Assembly



DTX 015



DTX 007



Invalidity: '377 Patent *Obviousness Due to Tomlinson + Linscott*

'377 Patent, Claim 1

Claim Limitation	Disclosed in Tomlinson + Linscott
[1a] An apparatus for making frozen drinks from a frozen substance frozen into a cup, comprising:	
[1b] a housing;	
[1c] a cup support mounted to the housing;	
[1d] a liquid dispenser having an outlet positioned to direct liquid into a cup positioned in the cup support;	
[1e] grinding means for, when a cup containing a frozen substance is positioned in the cup support, grinding the frozen substance to form a ground substance; and	
[1f] aeration means for, when a cup containing a frozen substance is positioned in the cup support, causing air to be incorporated into a mixture of the ground substance formed by the grinding means and the liquid dispensed by the liquid dispenser.	

DDX 10-114

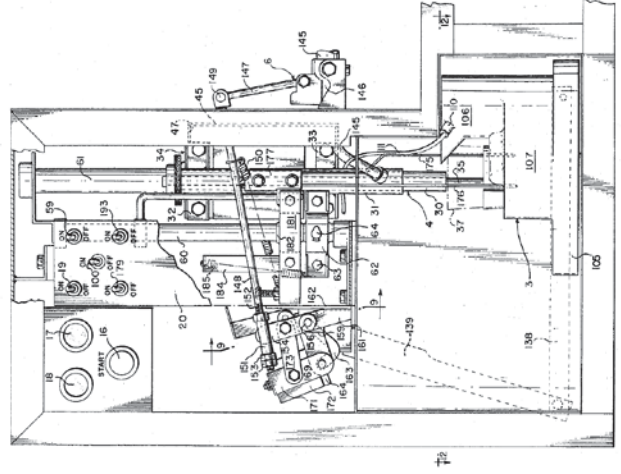
Invalidity: '377 Patent *Obviousness Due to Tomlinson + Linscott*

[1a] An apparatus
for making frozen
drinks from a frozen
substance frozen
into a cup

Tomlinson

Another object of the present invention is to provide a mixing machine of the character described wherein the basic frozen mixture is pre-frozen in containers from which the milk shake is to be consumed and subsequently reduced to a finely divided form with the addition of milk.

DTX 015, 2:9-14



DTX 015

FIG 3

BARNARD E. TOMLINSON
ORVILLE E. JAY

DDX 10-115

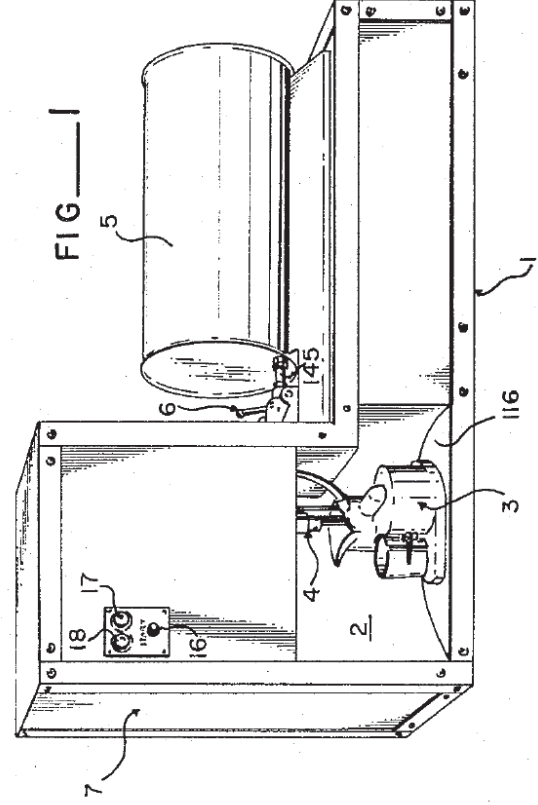
Invalidity: '377 Patent Obviousness Due to Tomlinson + Linscott

[1b] a housing

Tomlinson

Referring now to the drawings, wherein like reference numerals indicate identical parts in the various views, the automatic mixing device of the present invention comprises an overall frame structure and enclosure indicated generally by the numeral 1 in FIG. 1, with the frame and enclosure walls including an inwardly curving wall portion 2. A container support and rinse tank assembly 3 is

DTX 015, 3:7-13



DTX 015

DDX 10-116

Invalidity: '377 Patent

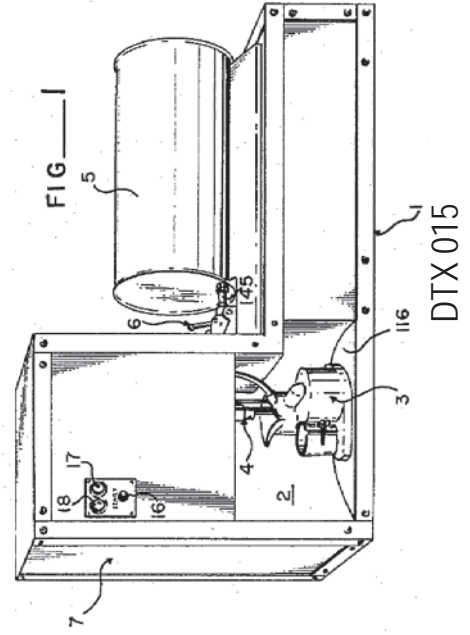
Obviousness Due to Tomlinson + Linscott

[1c] a cup support mounted to the housing

Tomlinson

Referring now to the drawings, wherein like reference numerals indicate identical parts in the various views, the automatic mixing device of the present invention comprises an overall frame structure and enclosure indicated generally by the numeral **1** in FIG. 1, with the frame and enclosure walls including an inwardly curving wall portion **2**. A container support and rinse tank assembly **3** is located within the curved wall portion **2** and directly beneath a rotatable mixing shaft assembly indicated generally at **4**. The frame structure **1** also supports a milk supply container **5** equipped with a milk supply valve arrangement **6**. The control mechanism presently to be de-

DTX 015, 3:7-18



DDX 10-117

Invalidity: '377 Patent Obviousness Due to Tomlinson + Linscott

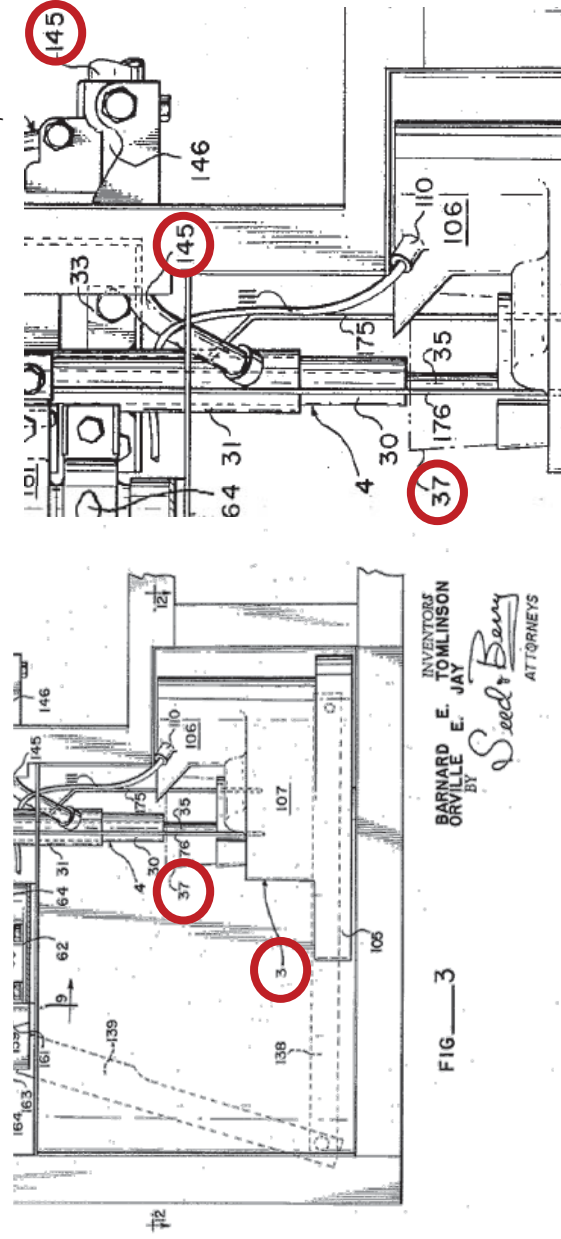
[1d] a liquid dispenser having an outlet positioned to direct liquid into a cup positioned in the cup support

Tomlinson

Milk flow control

During the cutting or shaving of the pre-frozen mixture, the present device automatically introduces a supply of milk into the container 37 from a supply source 5 shown in FIG. 1 to a suitable conduit 145 which is controlled by a milk supply valve arrangement indicated generally at 6 and shown most clearly in FIG. 3.

DTX 015, 10:28-36



DTX 015

DDX 10-118

Invalidity: '377 Patent *Obviousness Due to Tomlinson + Linscott*

[1e] grinding means for, when a cup containing a frozen substance is positioned in the cup support, grinding the frozen substance to form a ground substance



The term “grinding means for . . . grinding the frozen substance to form a ground substance” in the ‘377 patent is construed as a means-plus-function term. The claimed function is: “grinding the frozen substance to form a ground substance.” The corresponding structure is: “sharp depressed edge(s) of a rotatable blade having a slim cross-sectional profile.”⁷

Claim Construction Order (D.I. 83) at 4

Invalidity: '377 Patent Obviousness Due to Tomlinson + Linscott

[1e] grinding means for, when a cup containing a frozen substance is positioned in the cup support, grinding the frozen substance to form a ground substance

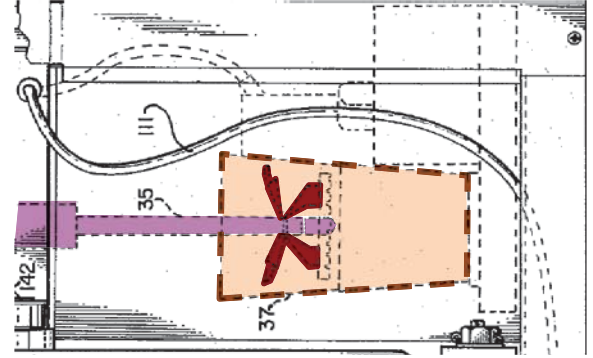
Tomlinson

operation. The cutting or shaving action is obtained by means of the four cutter blades 38 which have a sharp leading edge 39 and a plurality of notches 40. The result of the combined action of the sharpened edges 39 and of the notches 40 on the frozen mixture is to reduce the frozen substance into finely divided chips or flakes. It

DTX 015
4:69-74

Immediately above the blades 38 is a second set of diametrically opposed mixing blades 41. The blades 41 cooperate with a third set of mixing blades 42 to thoroughly mix the milk in the container with the particles of frozen mixture produced by the cutter blades 38. In ad-

DTX 015
5:3-7



DTX 015
Fig. 2

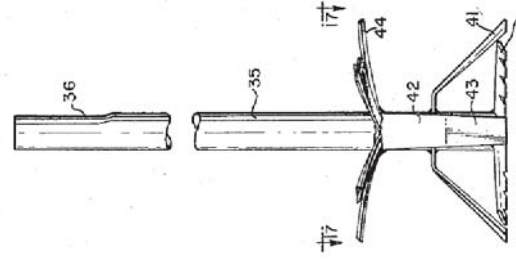


FIG. 16

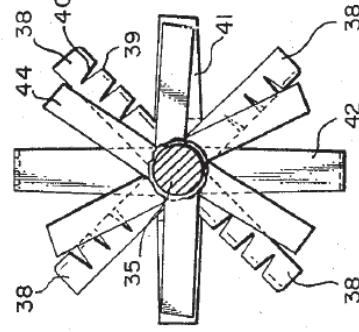


FIG. 17 DDX 10-120

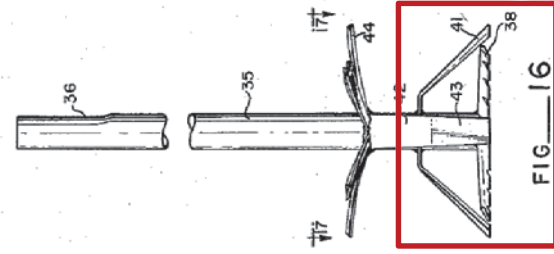
Invalidity: '377 Patent Obviousness Due to Tomlinson + Linscott

[1e] grinding means for, when a cup containing a frozen substance is positioned in the cup support, grinding the frozen substance to form a ground substance

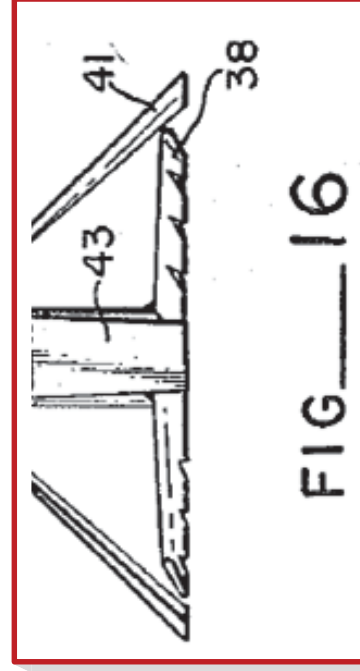
Tomlinson

As illustrated in FIG. 2, the lower portion of the shaft 35 and the associated blades extend down into the container 37, indicated in dotted line and contact the frozen mixture in the bottom of the container during the mixing operation. The cutting or shaving action is obtained by means of the four cutter blades 38 which have a sharp leading edge 39 and a plurality of notches 40. The result of the combined action of the sharpened edges 39 and the notches 40 on the frozen mixture is to reduce the frozen substance into finely divided chips or flakes. It

DTX 015, 4:65-74



DTX 015



Sharp depressed edges

DDX 10-121

Invalidity: '377 Patent *Obviousness Due to Tomlinson + Linscott*

[1f] aeration means for, when a cup containing a frozen substance is positioned in the cup support, causing air to be incorporated into a mixture of the ground substance formed by the grounding means and the liquid dispensed by the liquid dispenser.



The term “aeration means for . . . causing air to be incorporated into a mixture” in the ‘377 patent is construed as a means-plus-function term. The claimed function is: “causing air to be incorporated into a mixture.” The corresponding structure is: “curved, wave-like structure(s) on a rotatable blade with a slim cross-sectional profile.”⁹

Claim Construction Order (D.I. 83) at 5

Invalidity: '377 Patent *Obviousness Due to Tomlinson + Linscott*

[1f] aeration means for, when a cup containing a frozen substance is positioned in the cup support, causing air to be incorporated into a mixture of the ground substance formed by the grounding means and the liquid dispensed by the liquid dispenser.

Tomlinson

frozen substance into finely divided chips or flakes. It will also be noted that the tapered shape of the blades 38 tends to circulate the liquid in the cup in an upward direction during rotation of the blades.

Immediately above the blades 38 is a second set of diametrically opposed mixing blades 41. The blades 41 cooperate with a third set of mixing blades 42 to thoroughly mix the milk in the container with the particles of frozen mixture produced by the cutter blades 38. In ad-

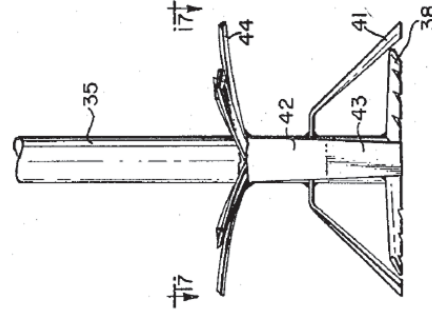


FIG. 16

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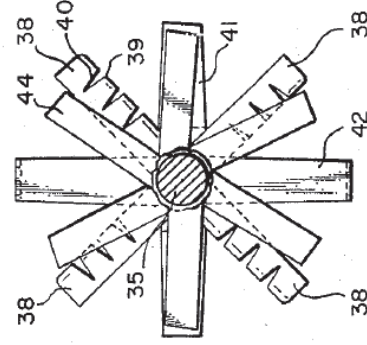


FIG. 17

DTX 015, 4:74-5:7

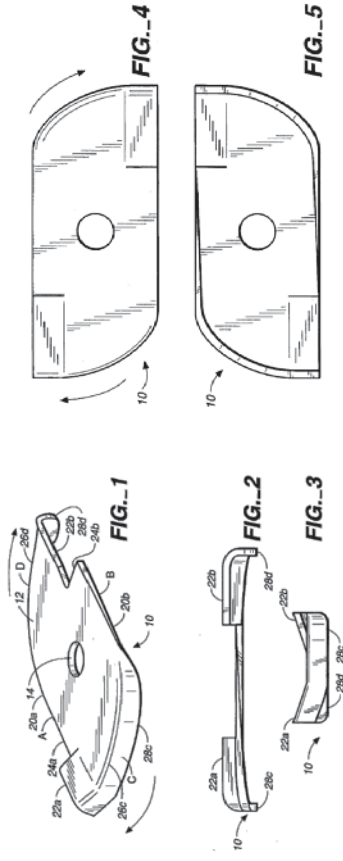
Invalidity: '377 Patent Obviousness Due to Tomlinson + Linscott

[1f] aeration means for, when a cup containing a frozen substance is positioned in the cup support, causing air to be incorporated into a mixture of the ground substance formed by the grounding means and the liquid dispensed by the liquid dispenser.

Linscott

canister wall is deflected circularly upward instead. When the fluid reaches the top of the fluid column, it is sucked radially inward (centripetally) into the vortex created by the whirling blades. Along with entrained air, the fluid then moves downward to the blades, and is thrown outward once again. This vigorous flow pattern, which is made increasingly turbulent by entrained air as the speed of rotation rises, includes the entire liquid volume of the mixing canister, and is responsible for the rapid and thorough blending which is achieved by the present invention. This flow pattern is enhanced by both the up-turned tabs and the down-turned skirts of the inventive blade design.

DTX 007, 2:5-16

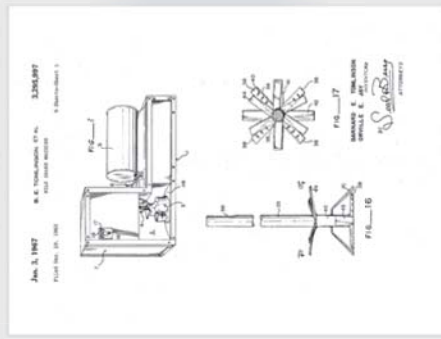


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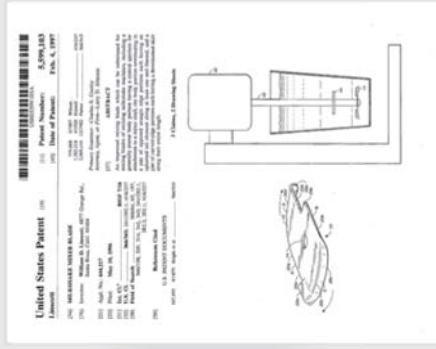
To the extent that the accused product with a twist is found to have "wave-like structures," Linscott also has "wave-like structures"

Invalidity: '377 Patent Obviousness Due to Tomlinson + Linscott

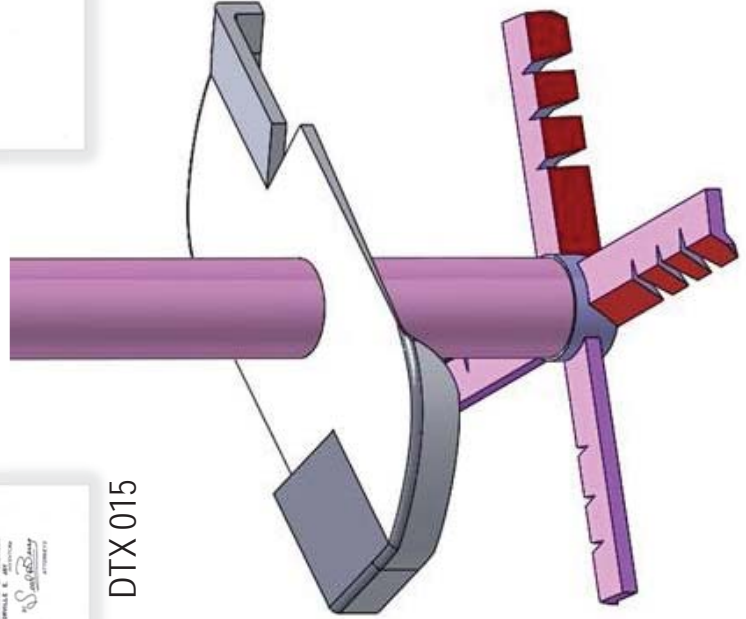
Combined Tomlinson / Linscott Blade Assembly



DTX 015









DTX 007



To the extent that the accused product with a twist is found to have “wave-like structures,” Linscott also has “wave-like structures”

Invalidity: '377 Patent *Obviousness Due to Tomlinson + Linscott*

'377 Patent, Claim 1

Claim Limitation	Disclosed in Tomlinson + Linscott
[1a] An apparatus for making frozen drinks from a frozen substance frozen into a cup, comprising:	
[1b] a housing;	
[1c] a cup support mounted to the housing;	
[1d] a liquid dispenser having an outlet positioned to direct liquid into a cup positioned in the cup support;	
[1e] grinding means for, when a cup containing a frozen substance is positioned in the cup support, grinding the frozen substance to form a ground substance; and	
[1f] aeration means for, when a cup containing a frozen substance is positioned in the cup support, causing air to be incorporated into a mixture of the ground substance formed by the grinding means and the liquid dispensed by the liquid dispenser.	

Invalidity: '377 Patent *Obviousness Due to Tomlinson + Linscott*

'377 Patent, Claim 11

Claim Limitation	Disclosed in Tomlinson + Linscott
[11a] An apparatus for making frozen drinks from a frozen substance frozen into a cup, comprising:	
[11b] a housing;	
[11c] a cup support mounted to the housing;	
[11d] a rotatable blade assembly mounted within the housing;	
[11e] the blade assembly including shaving elements and aeration elements; and	
[11f] the blade assembly movable between upper and lower blade positions, the lower blade position being at a height such that when a cup is positioned in the cup support, the blade assembly is positioned within the cup and adjacent to the cup bottom.	

Invalidity: '377 Patent *Obviousness Due to Tomlinson + Linscott*

[1a], [1b], and [1c]  [11a], [11b], and [11c]

'377 Patent, Claim 1	'377 Patent, Claim 11
[1a] An apparatus for making frozen drinks from a frozen substance frozen into a cup, comprising:	[11a] An apparatus for making frozen drinks from a frozen substance frozen into a cup, comprising:
[1b] a housing;	[11b] a housing;
[1c] a cup support mounted to the housing;	[11c] a cup support mounted to the housing;

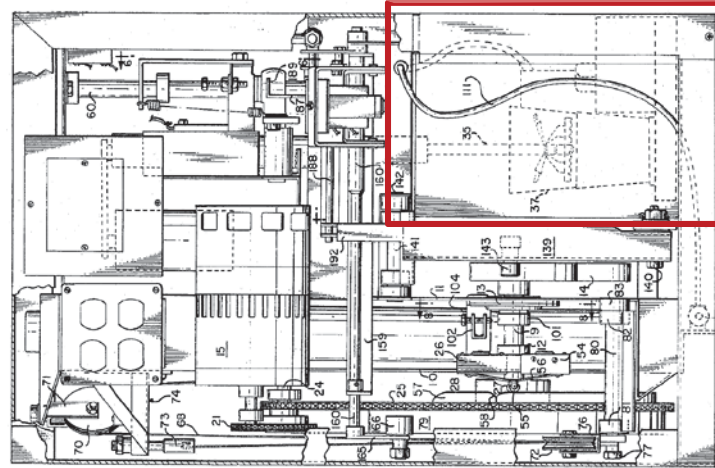
Invalidity: '377 Patent Obviousness Due to Tomlinson + Linscott

[11d] a rotatable
blade assembly
mounted within the
housing

Tomlinson

As illustrated in FIG. 2, the lower portion of the shaft 35 and the associated blades extend down into the container 37, indicated in dotted line and contact the frozen mixture in the bottom of the container during the mixing operation. The cutting or shaving action is obtained by

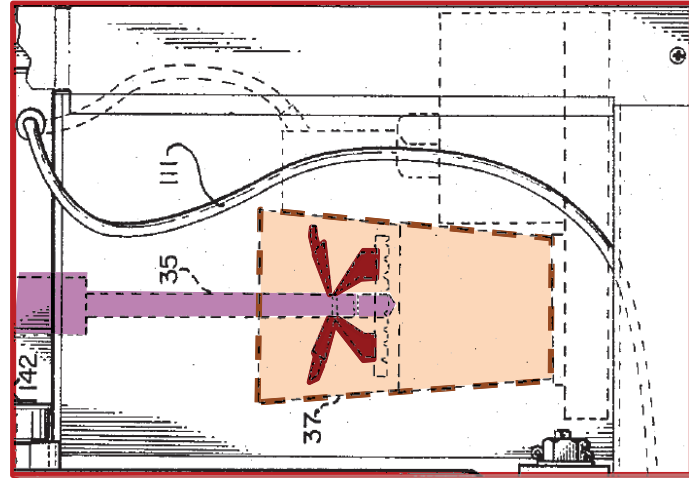
DTX 015, 4:65-69



BARNARD E. TOMLINSON
ORVILLE E. JAY

FIG. 2

DTX 015



DDX 10-129

Invalidity: '377 Patent Obviousness Due to Tomlinson + Linscott

[11e] the blade assembly including shaving elements and aeration elements

Tomlinson

As illustrated in FIG. 2, the lower portion of the shaft 35 and the associated blades extend down into the container 37, indicated in dotted line and contact the frozen mixture in the bottom of the container during the mixing operation. The cutting or shaving action is obtained by means of the four cutter blades 38 which have a sharp leading edge 39 and a plurality of notches 40. The result of the combined action of the sharpened edges 39 and the notches 40 on the frozen mixture is to reduce the frozen substance into finely divided chips or flakes. It will also be noted that the tapered shape of the blades 38 tends to circulate the liquid in the cup in an upward direction during rotation of the blades.

Immediately above the blades 38 is a second set of diametrically opposed mixing blades 41. The blades 41 cooperate with a third set of mixing blades 42 to thoroughly mix the milk in the container with the particles of frozen mixture produced by the cutter blades 38. In ad-

DTX 015
4:65-5:7

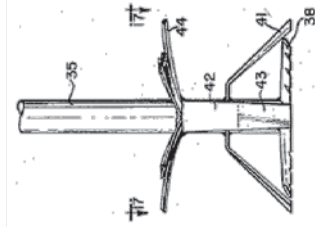


FIG. 16

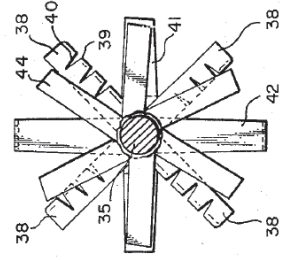


FIG. 17 DTX 015

DDX 10-130

Invalidity: '377 Patent Obviousness Due to Tomlinson + Linscott

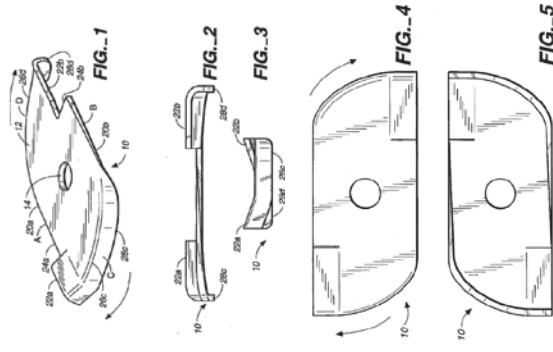
[11e] the blade assembly including shaving elements and aeration elements

Linscott

3. A method for improving a milkshake machine, said milkshake machine having a downwardly-dependent motor shaft and at least one mixing blade, said method comprising the steps of:

replacing said at least one mixing blade with a mixing blade having a generally planar body portion having a central aperture for attachment to the motor shaft, said body portion terminating in a pair of opposed straight edge portions each having an upturned tab element along an end thereof, and a pair of curved edge portions each having a downturned skirt along their entire length.

DTX 007, Claim 3



canister wall is deflected circularly upward instead. When the fluid reaches the top of the fluid column, it is sucked radially inward (centripetally) into the vortex created by the whirling blades. Along with entrained air, the fluid then moves downward to the blades, and is thrown outward once again. This vigorous flow pattern, which is made increasingly turbulent by entrained air as the speed of rotation rises, includes the entire liquid volume of the mixing canister, and is responsible for the rapid and thorough blending which is achieved by the present invention. This flow pattern is enhanced by both the up-turned tabs and the down-turned skirts of the inventive blade design.

To the extent that the accused product with a twist is found to have "wave-like structures," Linscott also has "wave-like structures"

DTX 007, 2:5-16

DDX 10-131

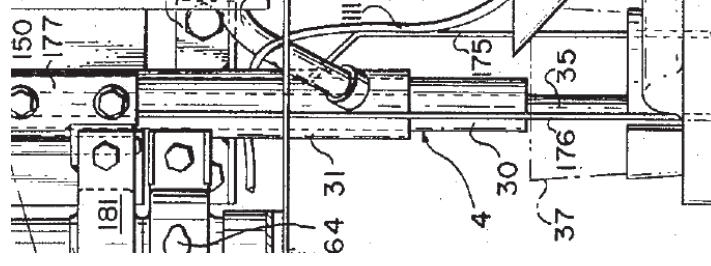
Invalidity: '377 Patent Obviousness Due to Tomlinson + Linscott

[11f] the blade assembly movable between upper and lower blade positions, the lower blade position being at a height such that when a cup is positioned in the cup support, the blade assembly is positioned within the cup and adjacent to the cup bottom.

Tomlinson

Before explaining the details of the structure for raising and lowering the mixing shaft assembly 4 between a rinse position and a mixing position, it will first be noted that the entire mixing motor assembly and the rotating shaft are mounted for vertical reciprocation, with the container support and rinse tank assembly 3 being swingable so as to place either a rinsing tank or a milk shake container beneath the blade shaft 35. The reciprocation of the

DTX 015, 6:7-14









DTX 015, Fig. 3

mixer blade shaft from the rinse tank. As the cam sprocket 8 continues to rotate, the roller 78 passes off of the lobe 84 and follows the cam track 79 which allows the mixer motor assembly to slowly descend as the cutter blades engage the frozen substance. The amount of descent allowed to the mixing apparatus will be determined by the configuration of the cam track so as to allow the cutters to approach very closely the bottom of the milk shake container but not beyond. After the mixing blades have reached their lowest limit, the cam roller 78 begins to ride up on the lobe 85 to again raise the mixing assembly out of the finished milk shake.

DTX 015, 7:27-38

Invalidity: '377 Patent *Obviousness Due to Tomlinson + Linscott*

'377 Patent, Claim 11

Claim Limitation	Disclosed in Tomlinson + Linscott?
[11a] An apparatus for making frozen drinks from a frozen substance frozen into a cup, comprising:	
[11b] a housing;	
[11c] a cup support mounted to the housing;	
[11d] a rotatable blade assembly mounted within the housing;	
[11e] the blade assembly including shaving elements and aeration elements; and	
[11f] the blade assembly movable between upper and lower blade positions, the lower blade position being at a height such that when a cup is positioned in the cup support, the blade assembly is positioned within the cup and adjacent to the cup bottom.	

Invalidity: '150 Patent Based on *Obviousness*

Primary

Secondary

Secondary

Farrell

U.S. 7,144,150

Neilson

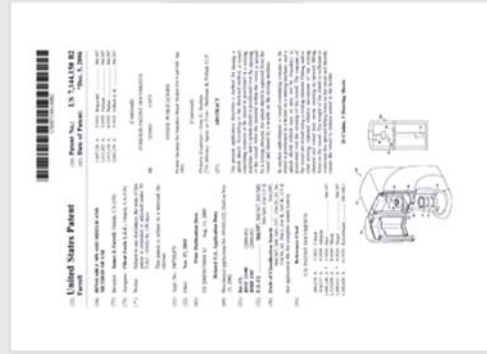
U.S. 5,439,289

Kelly

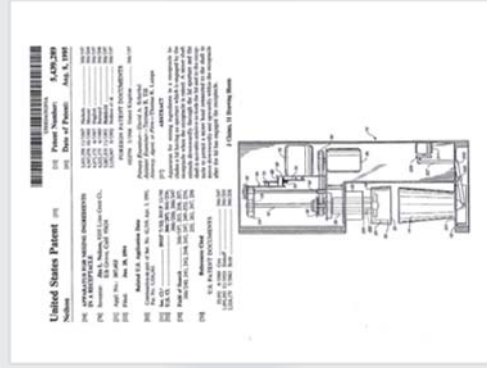
U.S. 4,740,088

Miller et al.

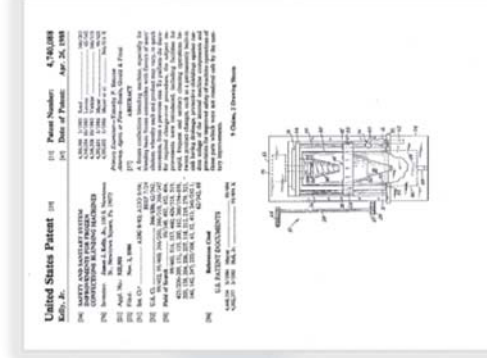
U.S. 2002/0048626 A1



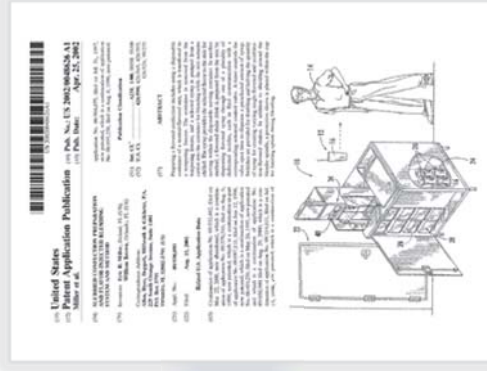
Filed
Nov. 17, 2003
JTX 002



Prior art:
Issued
Aug. 8, 1995
DTX 016



Prior art:
Issued
Apr. 26, 1988
DTX 005



Prior art:
Filed
Aug. 15, 2001
Pub.
Apr. 25, 2002
DTX 008

DDX 10-134

Invalidity: '150 Patent Based on *Obviousness*

Neilson U.S. 5,439,289

United States Patent ^[19] **Patent Number:** **5,439,289**
Neilson **Date of Patent:** **Aug. 8, 1995**

APPARATUS FOR MIXING INGREDIENTS IN A RECEPTACLE

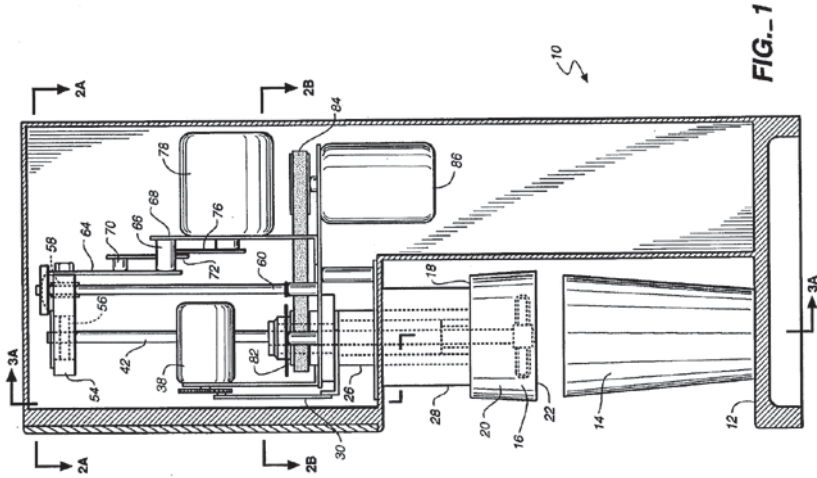


FIG. 1

DDX 10-135

DTX 016

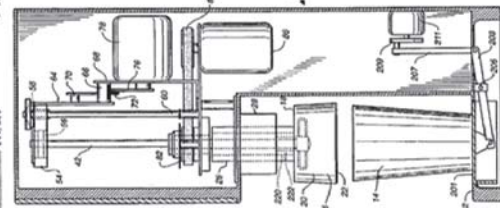

 US6054392B1A
United States Patent
 Nelson
 (19) Patent Number: 5,439,289
 (45) Date of Patent: Aug. 8, 1995

[54]	APPARATUS FOR MIXING INGREDIENTS IN A RECEPTACLE	3,431,298 11/19/87	Nichols	366/244
		4,517,296 12/23/82	Manner	366/241
		4,671,172 6/19/87	Saglich	366/206
[76]	Inventor: Jim L. Neilson, 2025 Line Crest C., Elk Grove, Calif. 95624	4,332,175 4/9/89	Burnard	366/206
		5,053,595 11/19/91	Hinsbold	366/197
[21]	App. No.: 267,452	3,197,981 9/19/86	Neilson et al.	366/177
[22]	Filed: Jan. 26, 1994	FOREIGN PATENT DOCUMENTS		
		1072256 3/1/66	United Kingdom	366/197

[63] **Related U.S. Application Data**
Primary Examiner—David A. Scharbel
Assistant Examiner—Terrence R. Tull
Attorney, Agent, or Firm—Thomas P. Lampe

[57]	Abstract	Apparatus for mixing ingredients in a reciprocate in-cludes a lid having an aperture which is engaged by the reciprocate when the reciprocate is raised. A mixer shaft extends downwardly through the lid aperture and the shaft is movable relative to both the lid and to the reciprocate to permit mixing and upwardly within the reciprocate after the lid has engaged the reciprocate.
[58]	Field of Search	267, 268, 269, 270, 271, 280, 281, 282, 284, 287, 288, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.
[59]	References Cited	U.S. PATENT DOCUMENTS
[60]	Int. Cl.	B01F 7/32, B01F 13/00.
[61]	U.S. Cl.	366, 297, 366, 296.
[62]	Field of Search	267, 268, 269, 270, 271, 280, 281, 282, 284, 287, 288, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319,

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3 Claims, 11 Drawing Sheets

43	11/1923	Debuff	166/203
79	7/1943	Srob	166/206

1,691.8
2,324.1

Invalidity: '150 Patent Based on *Obviousness*

Kelly U.S. 4,740,088

United States Patent [19]
Kelly, Jr.

[11] Patent Number: 4,740,088
[43] Date of Patent: Apr. 26, 1988

[54] SAFETY AND SANITARY SYSTEM
IMPROVEMENTS FOR FROZEN
CONFECTIONS BLENDING MACHINES

[76] Inventor: James J. Kelly, Jr., 100 S. Newtown
St., Newtown Square, Pa. 19073

[21] Appl. No.: 925,901

[22] Filed: Nov. 3, 1986

[31] Int. Cl.: A23G 9/02; A23G 9/04;

[32] U.S. Cl.: 99/452; 99/460; 366/203; 366/318; 366/347;

[33] Field of Search: 99/458; 492; 452; 494;

99/460; 516; 517; 460; 426/518-519;

425/206-209; 151; 155; 200; 182; 366/194-198;

203; 138; 204; 206; 307; 318; 312; 279; 323;

140; 142; 247; 222/108; 63; 52; 413; 287/282-1;

62/544; 68

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9 Claims, 2 Drawing Sheets

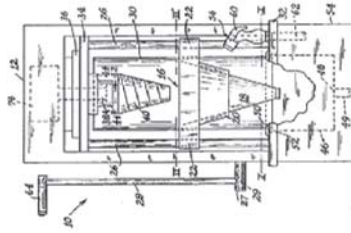


Fig. 1.

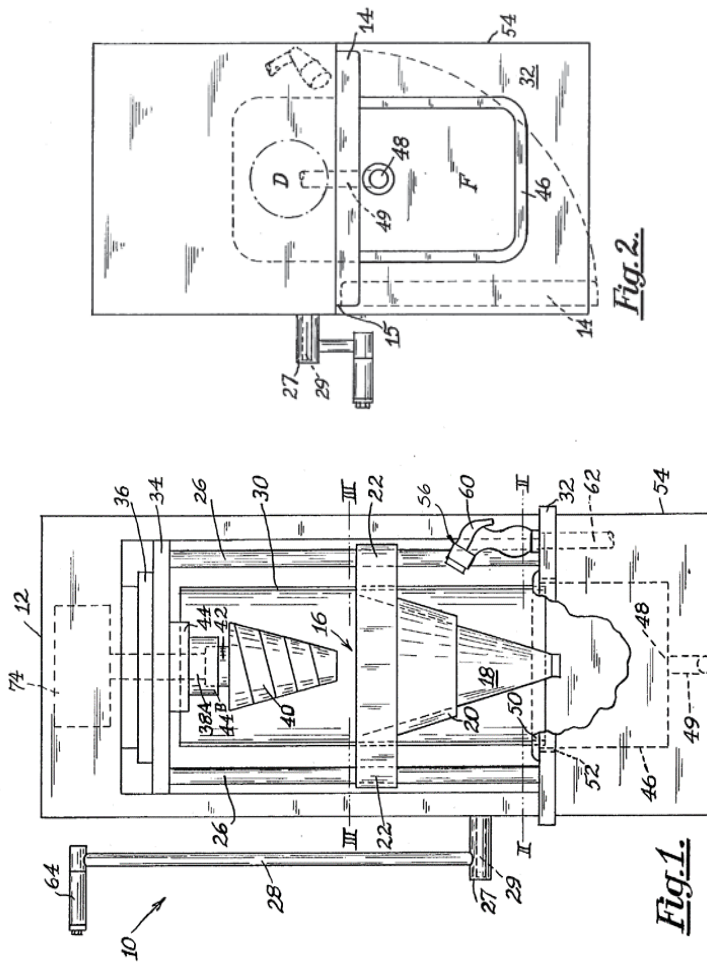


Fig. 2.

United States Patent [19] Patent Number: 4,740,088
Kelly, Jr. Date of Patent: Apr. 26, 1988

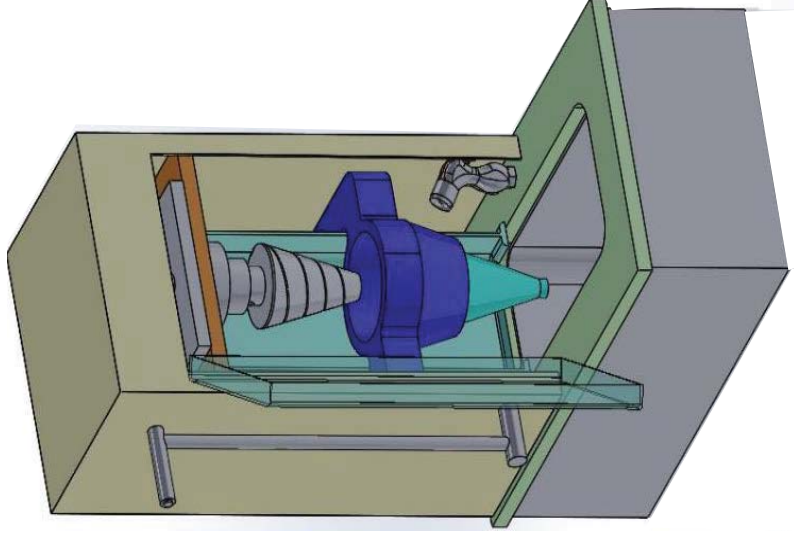
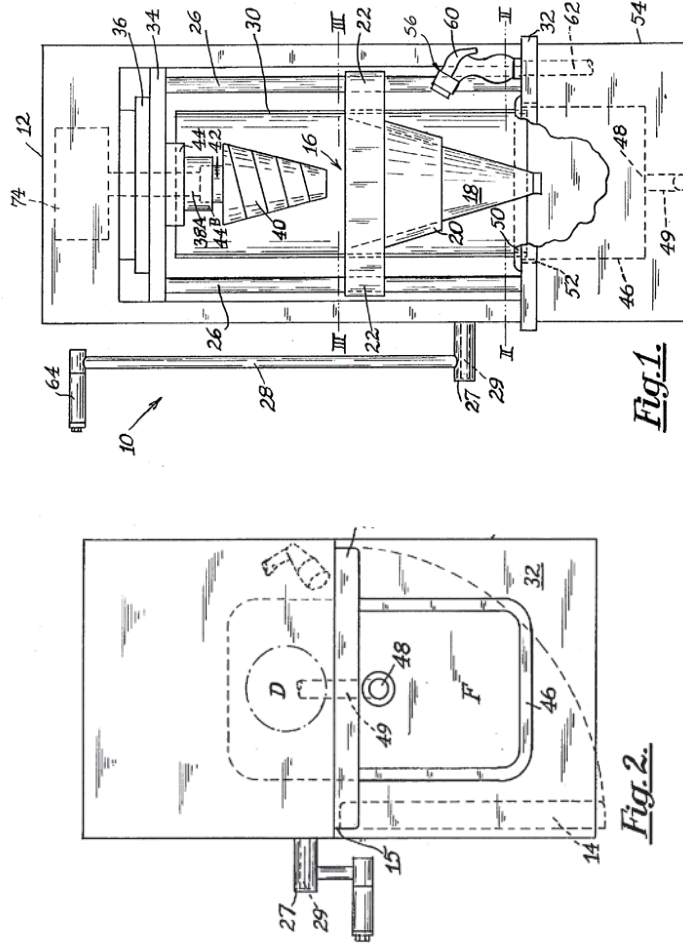
SAFETY AND SANITARY SYSTEM IMPROVEMENTS FOR FROZEN CONFECTIONS BLENDING MACHINES

[57] **ABSTRACT**
A frozen confections blending machine, especially for blending frozen confections with flavors at user's choice, is described. The machine includes a mixing assembly, from a previous one. To perform the required change-over procedure, the subject improvements were introduced, including facilities for rapid, frequent and sanitary cleaning operations; between product changes, such as a permanently built-in tank having drainage, protective shieldings against random spillage of the internal machine components and protective shieldings against contact with the machine parts which were not rendered safe by the sanitary improvements.

Primary Examiner—Timothy F. Sincore
Attorney, Agent, or Firm—Stech, Gould & Fрид

Invalidity: '150 Patent Based on *Obviousness*

Kelly U.S. 4,740,088



To complete the sanitary equipment, at least one spray device 56 is provided inside or about the enclosure 12. Such a spray device 56 may be rotatable and tiltable and is, for example, adjustable in such a manner so as to clean the interior of the auger, the mixing cone and the entire interior. Such a spray device 56 may have a valve (not shown) operable by a handle 60 and a hose, or collar connection 62 to the local water supply line.

Enclosure and cleaning nozzle(s)

Invalidity: '150 Patent Based on *Obviousness*

Miller et al.

U.S. 2002/0048626 A1



US 2002/0048626 A1

(19) United States
(12) Patent Application Publication
(43) Pub. No.: US 2002/0048626 A1
(43) Pub. Date: Apr. 25, 2002

(54) SLURRIED CONFECTION PREPARATION
AND FLAVOR-INJECTED BLENDING
SYSTEM AND METHOD

(70) Inventors: Eric R. Miller, Deland, FL (US);
William Brown, Orlando, FL (US)

Correspondence Address:
Allen, Dyer, Doppelt, Milbrath & Gilchrist, P.A.,
225 South Orange Avenue, Suite 1401
Orlando, FL 32802-3791 (US)

(21) Appl. No.: 09/930,090
(22) Filed: Aug. 15, 2001

Related U.S. Application Data

(63) Continuation of application No. 09/532,482, filed on Aug. 15, 2000, which is a continuation-in-part of application No. 09/370,510, filed on Aug. 6, 1999, now patented, which is a continuation-in-part of application No. 09/097,111, filed on Jan. 12, 1998, now patented, which is a continuation of application No. 08/451,256, filed on May 26, 1995, now patented, which is a continuation of application No. 09/550,980, filed on Aug. 29, 2000, which is a continuation of application No. 09/114,611, filed on Jul. 13, 1998, now patented, which is a continuation of

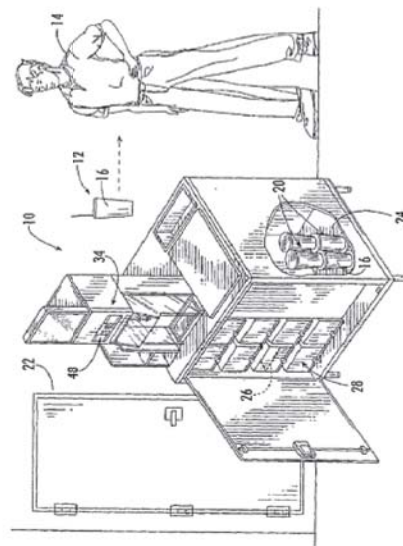
application No. 08/904,075, filed on Jul. 31, 1997, now patented, which is a continuation of application No. 08/695,238, filed on Aug. 8, 1996, now patented.

Publication Classification

(51) Int. Cl.⁷ A21, 190, 1165H 55/00
(52) U.S. Cl. 426/596, 426/565, 426/593, 426/524, 99/275

ABSTRACT

Preparing a flavored confection includes using a disposable container of fluid material, such as a syrup, and a tempering freezer. The container is removed from the tempering freezer, and a selected syrup is pumped from a canister into the container for blending while the mix remains chilled. The syrup provides the selected flavor to the mix for serving within the disposable serving container. In another embodiment, a syrup is pumped from a canister into a plurality of dispensing nozzles, each in fluid communication with a corresponding solenoid control valve. A liner outside the valve open time to dispense a preselected amount of syrup. Switches are provided for doubling and halving the quantity of syrup dispensed. The syrup is dispensed into a portion of line-flavored shakes. In addition to shielding around the blender spindle, a protective sleeve is placed within the cup for limiting splash during blending.



DTX 008

United States
Patent Application Publication
Miller et al.
Pub. No.: US 2002/0048626 A1
Apr. 25, 2002

SLURRIED CONFECTION PREPARATION AND FLAVOR-INJECTED BLENDING SYSTEM AND METHOD

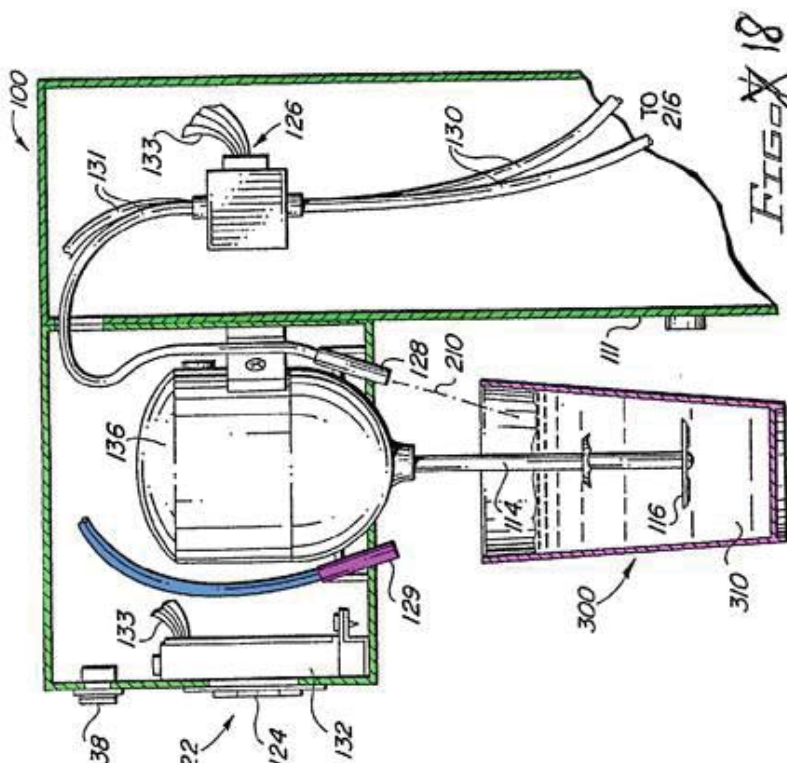


FIG. 18

Invalidity: '150 Patent Based on *Obviousness*

'150 Patent, Claim 15

Claim Limitation	Disclosed in Neilson + Kelly + Miller
[15a] On a mixing machine for mixing a liquid contained in a vessel having an opening, the mixing machine of a type including a rotatable mixing element extendable into the vessel for mixing the contents of the vessel, the improvement comprising:	
[15b] a rinse chamber in the mixing machine, the rinse chamber having an entrance and a door moveable to a closed position covering the entrance;	
[15c] a splash shield carried by the mixing machine, the splash shield positionable covering the opening of the vessel, and	
[15d] at least one nozzle coupled to a source of rinse fluid and oriented to direct rinse fluid onto the splash shield within the rinse chamber.	

Invalidity: '150 Patent Based on *Obviousness*

[15a] On a mixing machine for mixing a liquid contained in a vessel having an opening, the mixing machine of a type including a rotatable mixing element extendable into the vessel for mixing the contents of the vessel, the improvement comprising

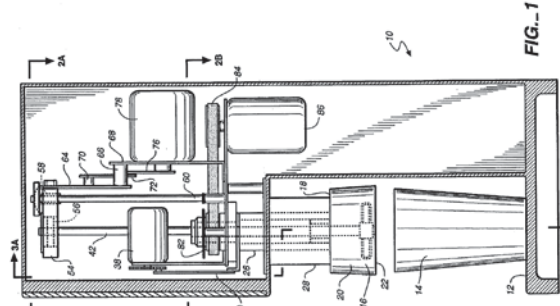
Neilson

APPARATUS FOR MIXING INGREDIENTS IN A RECEPTACLE

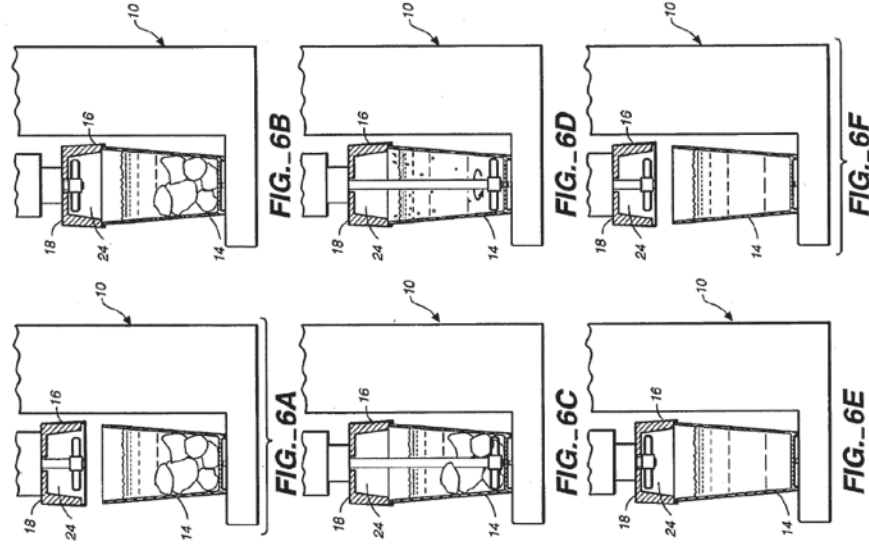
[57] ABSTRACT

Apparatus for mixing ingredients in a receptacle includes a lid having an aperture which is engaged by the receptacle when the receptacle is raised. A mixer shaft extends downwardly through the lid aperture and the shaft is moveable relative to both the lid and to the receptacle to permit a mixer head connected to the shaft to move downwardly and upwardly within the receptacle after the lid has engaged the receptacle.

DTX 016, Abstract



DTX 016, Fig. 1



DTX 016, Fig. 6

DDX 10-140

Invalidity: '150 Patent Based on *Obviousness*

[15a] On a mixing machine for mixing a liquid contained in a vessel having an opening, the mixing machine of a type including a rotatable mixing element extendable into the vessel for mixing the contents of the vessel, the improvement comprising

Kelly

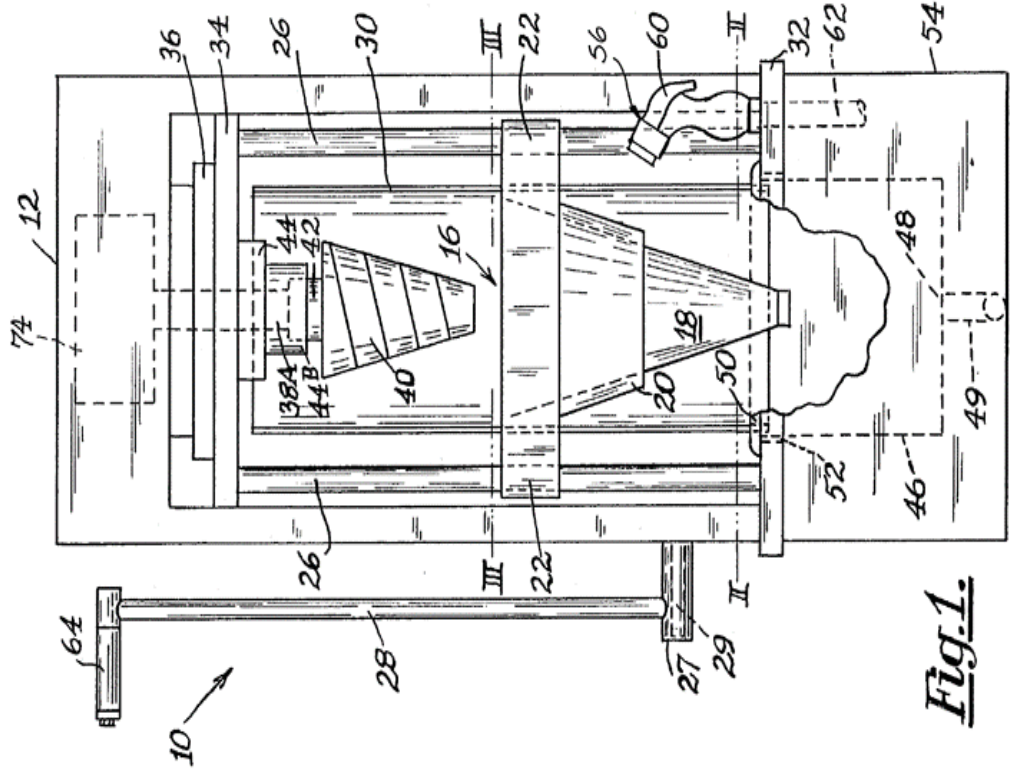


Fig. 1.

DTX 005, Fig. 1

DDX 10-141

Invalidity: '150 Patent Based on *Obviousness*

[15b] a rinse chamber in the mixing machine, the rinse chamber having an entrance and a door moveable to a closed position covering the entrance



"rinse chamber" – defined by the Court:

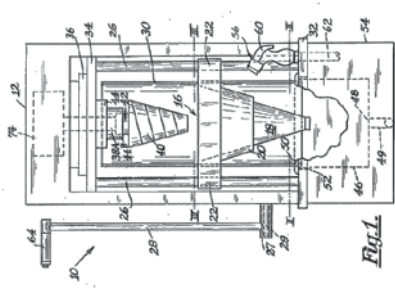
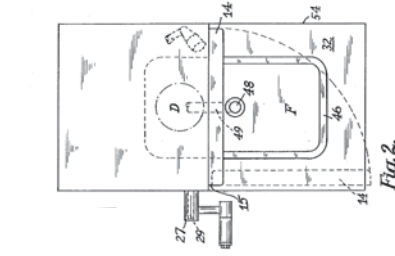
1. The term **"rinse chamber"** in the '150 patent is construed to mean **"an enclosure in which a rinse apparatus is positioned to provide rinsing."**²

Claim Construction Order (D.I. 83) at 1

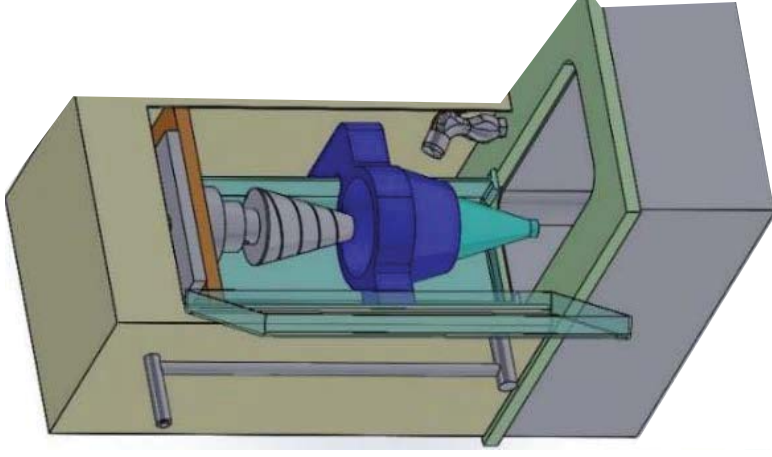
Invalidity: '150 Patent Based on *Obviousness*

[15b] a rinse chamber in the mixing machine, the rinse chamber having an entrance and a door moveable to a closed position covering the entrance

Kelly



DTX 005



Referring now to FIG. 1, the frozen confections blending machine 10, hereinafter called the machine, presents in front view the basic elements including those constituting individual improvements and jointly those of the entire machine 10. The machine 10 is inside an enclosure 12 of a durable material having a routinely and continuously washable material on all of its interior surfaces. A door 14 having a joint 15 at one of its sides, as indicated in FIG. 2, is mounted permanently on the front side of the enclosure 12. When the door is open, it allows for its cleaning together with all other interior component parts through other improvements described later on in this disclosure. To service or repair the machine 10, said door 14 remains in the open position. When in this position, the door can be cleaned individually.

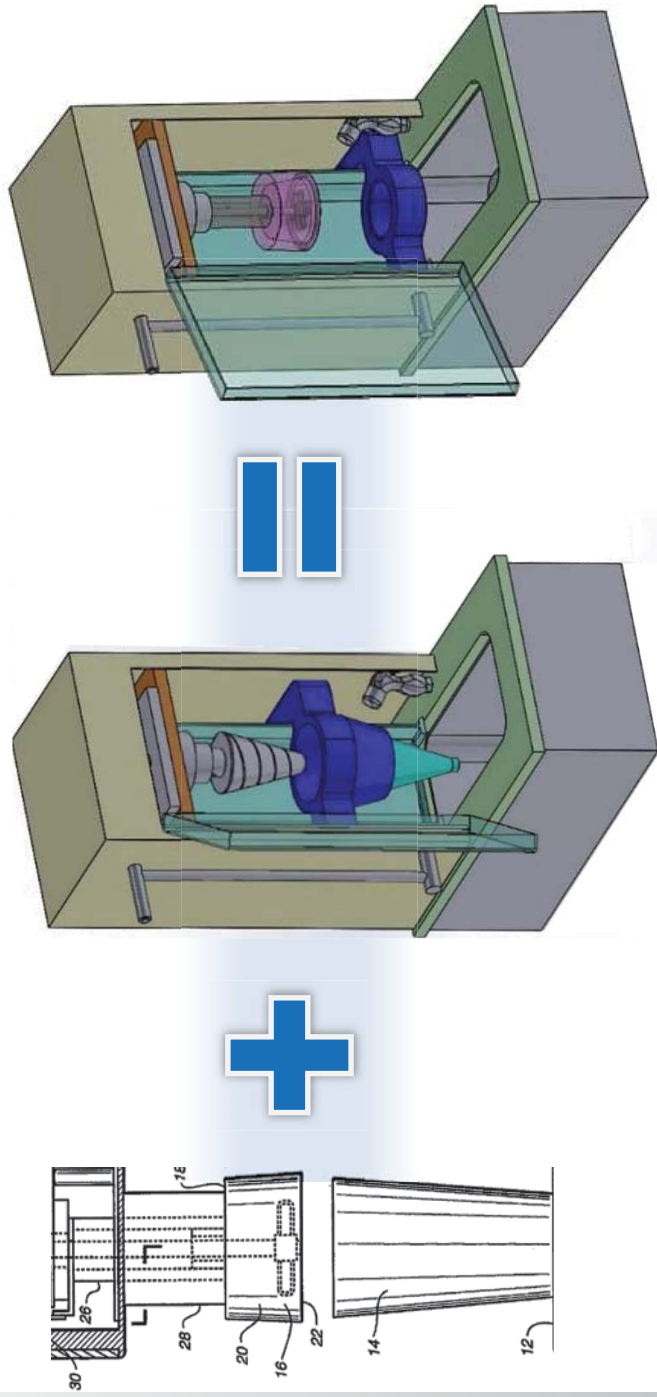
DTX 005, 2:39-54

DDX 10-143

Invalidity: '150 Patent Based on *Obviousness*

[15b] a rinse chamber in the mixing machine, the rinse chamber having an entrance and a door moveable to a closed position covering the entrance

Combining Neilson and Kelly



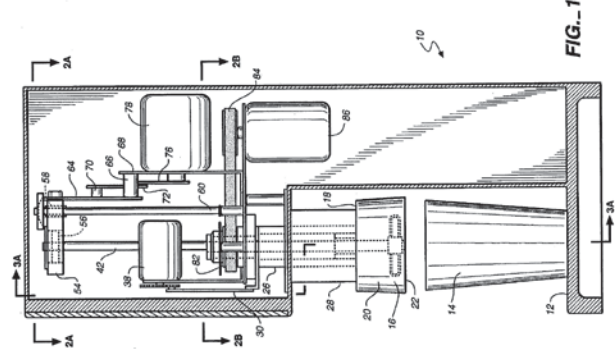
Invalidity: '150 Patent Based on *Obviousness*

[15c] a splash shield carried by the mixing machine, the splash shield positionable covering the opening of the vessel

Neilson

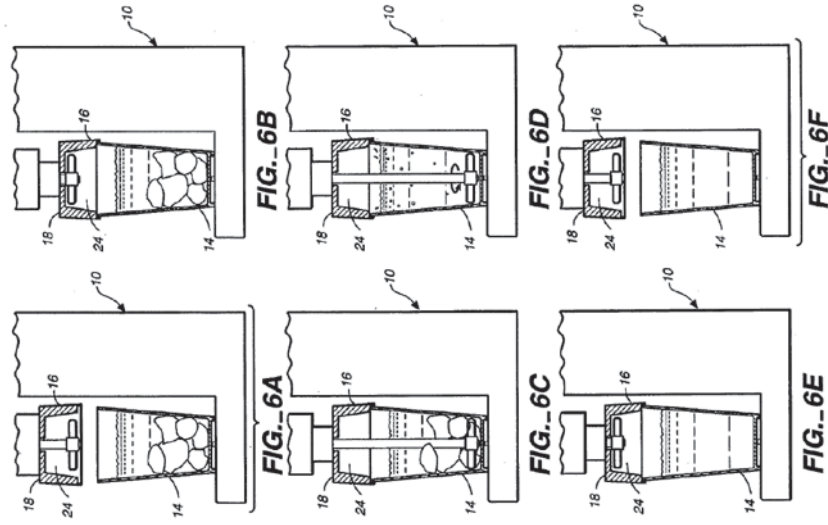
Receptacle 14, when positioned on platform 12, is disposed under a lid 16 having a top wall 18. A tapered wall having a circular cross section extends downwardly from top wall 18 and is designated by reference numeral 20. Tapered wall 20 has a lower rim 22 which is of a size and configuration corresponding to the top of the receptacle 14. That is, the rim 22 of lid 16 will engage the receptacle side wall when the lid and receptacle are axially aligned and brought into engagement. A recess 24 is defined by the top wall and tapered wall of the lid.

DTX 016, 3:1-11



DTX 016

FIG. 1



DTX 016

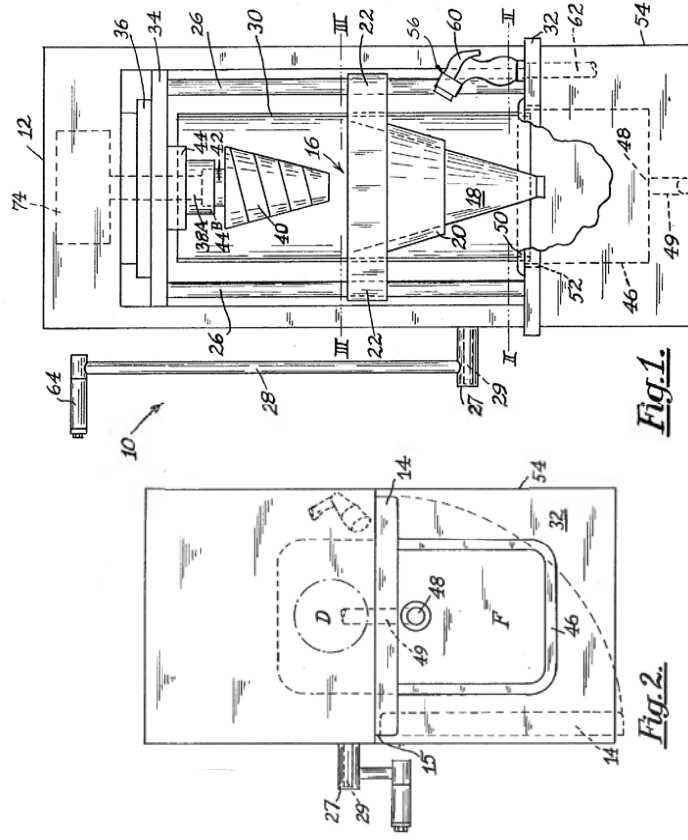
DDX 10-145

Invalidity: '150 Patent Based on *Obviousness*

[15d] at least one nozzle coupled to a source of rinse fluid and oriented to direct rinse fluid onto the splash shield within the rinse chamber

Kelly

Nozzle(s)



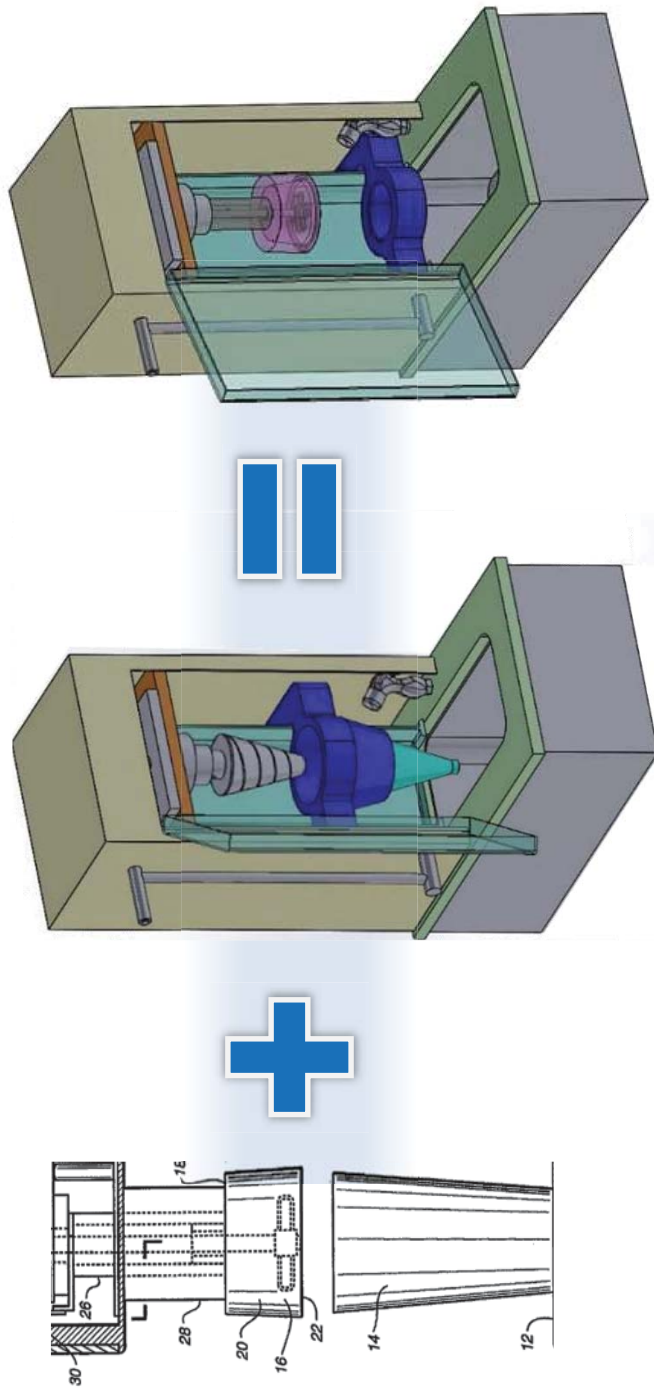
DTX 005, Fig. 2

DTX 005, Fig. 1

Invalidity: '150 Patent Based on *Obviousness*

[15d] at least one nozzle coupled to a source of rinse fluid and oriented to direct rinse fluid onto the splash shield within the rinse chamber

Combining Neilson and Kelly

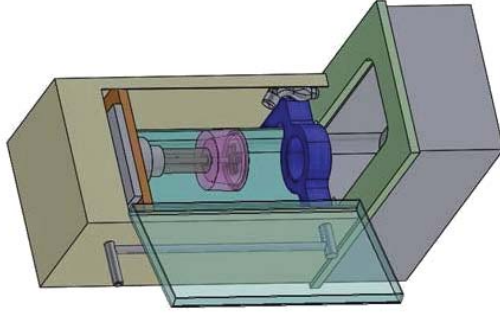


Invalidity: '150 Patent Based on *Obviousness*

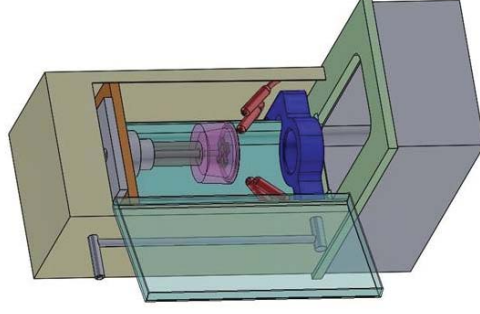
[15d] at least one nozzle coupled to a source of rinse fluid and oriented to direct rinse fluid onto the splash shield within the rinse chamber

To complete the sanitary equipment, at least one spray device 56 is provided inside or about the enclosure 12. Such a spray device 56 may be rotatable and tiltable and is, for example, adjustable in such a manner so as to clean the interior of the auger, the mixing cone and the entire interior. Such a spray device 56 may have a valve (not shown) operable by a handle 60 and a hose, or collar connection 62 to the local water supply line.

DTX 005, 4:13-20



Neilson + Kelly
(single nozzle)



Neilson + Kelly
(multiple nozzles)

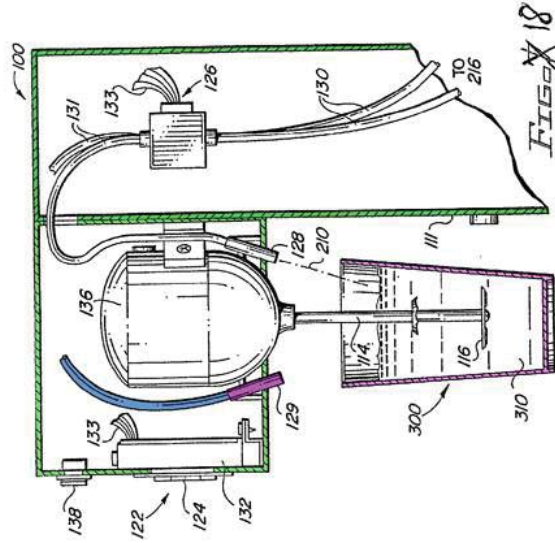
Invalidity: '150 Patent Based on *Obviousness*

[15d] at least one nozzle coupled to a source of rinse fluid and oriented to direct rinse fluid onto the splash shield within the rinse chamber

Miller

[0055] Yet again with reference to FIG. 17, a water supply or sterilizing solution is dispensed through the valve 127 for delivery of the sterilizing solution or fresh water through a dedicated nozzle 129 for flushing and cleaning the spindle 114 after each use in preparing a flavored shake. A switch 134 carried by the housing 110 activates the valve 127 for permitting the sterilizing solution to be dispensed through the nozzle 129 for cleaning the spindle 114, as illustrated with reference to FIG. 18. As further illustrated with refer-

DTX 008, ¶ 0055







DTX 008

Miller reinforces nozzle usage

DDX 10-149

Invalidity: '150 Patent Based on *Obviousness*

'150 Patent, Claim 15

Claim Limitation	Disclosed in Neilson + Kelly + Miller
[15a] On a mixing machine for mixing a liquid contained in a vessel having an opening, the mixing machine of a type including a rotatable mixing element extendable into the vessel for mixing the contents of the vessel, the improvement comprising:	
[15b] a rinse chamber in the mixing machine, the rinse chamber having an entrance and a door moveable to a closed position covering the entrance;	
[15c] a splash shield carried by the mixing machine, the splash shield positionable covering the opening of the vessel, and	
[15d] at least one nozzle coupled to a source of rinse fluid and oriented to direct rinse fluid onto the splash shield within the rinse chamber.	

DDX 10-150

Invalidity: '150 Patent Based on *Obviousness*

'150 Patent, Claim 20

Claim Limitation	Disclosed in Neilson + Kelly + Miller
20. The improvement of claim 15 , wherein the at least one nozzle is oriented to direct rinse fluid onto the mixing element.	

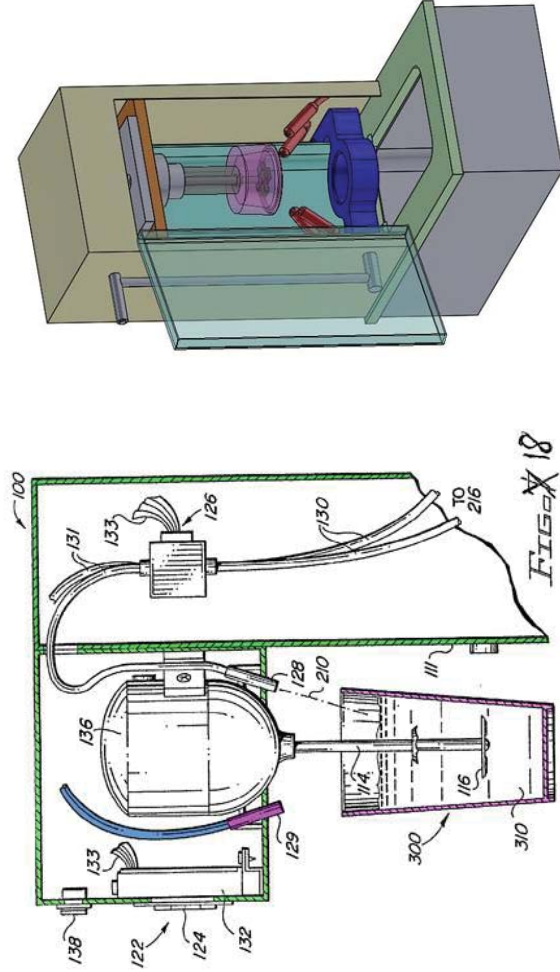
Invalidity: '150 Patent Based on *Obviousness*

20. The improvement of claim 15, wherein the at least one nozzle is oriented to direct rinse fluid onto the mixing element.

Miller

[0055] Yet again with reference to **FIG. 17**, a water supply or sterilizing solution is dispensed through the valve **127** for delivery of the sterilizing solution or fresh water through a dedicated nozzle **129** for flushing and cleaning the spindle **114** after each use in preparing a flavored shake. A switch **134** carried by the housing **110** activates the valve **127** for permitting the sterilizing solution to be dispensed through the nozzle **129** for cleaning the spindle **114**, as illustrated with reference to **FIG. 18**. As further illustrated with refer-

DTX 008, 10055



DTX 008

Invalidity: '150 Patent Based on *Obviousness*

'150 Patent, Claim 20:

Claim Limitation	Disclosed in Neilson + Kelly + Miller
20. The improvement of claim 15, wherein the at least one nozzle is oriented to direct rinse fluid onto the mixing element.	

Invalidity: '150 Patent Based on *Obviousness*

'150 Patent, Claim 22

Claim Limitation	Disclosed in Neilson + Kelly + Miller
22. The improvement of claim 15 , wherein the splash shield is of sufficient mass to retain the vessel within the holder during relative movement of the mixing element and vessel in opposite directions.	

Invalidity: '150 Patent Based on *Obviousness*

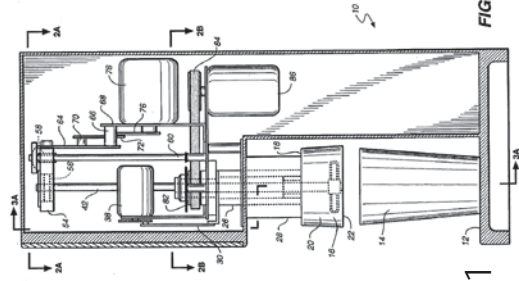
22. The improvement of claim 15, wherein the splash shield is of sufficient mass to retain the vessel within the holder during relative movement of the mixing element and vessel in opposite directions.

assuming additional parts can be considered for "sufficient mass"

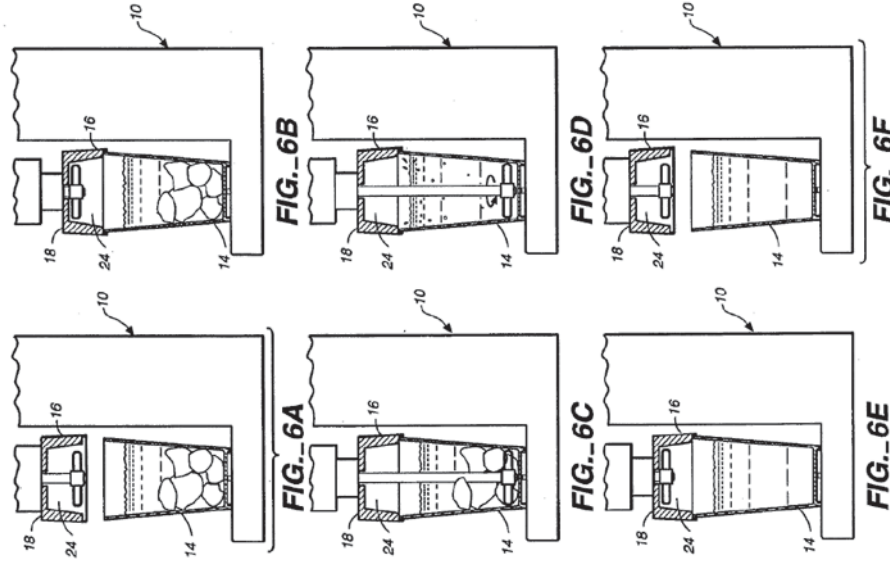
Neilson

Lid 16 is connected to and supported by a cylindrical-shaped lid support element 26 which is mounted for reciprocal up and down movement within an enlargement 28 comprising part of the housing 10. Up and down movement of the lid support element 26 and the lid 16 is effected by a crank arm 30 affixed to a cap 32 which in turn is affixed to lid support element 26. The upper end of crank arm 30 is connected to a stub shaft 34 on a rotatable gear or drive element 36 driven by a gear mounted on the drive shaft of electric motor 38 through an intermediate gear. It will be appreciated that the aforescribed mechanism operates as an eccentric drive which will move the lid 16 relative to the support from an elevated position (shown in FIGS. 1, 6A, and 6F) wherein the lid is not in engagement with receptacle 14 to a lower position (shown in FIGS. 3A and 3B, for example) wherein the lid engages the receptacle to close the receptacle opening at the top of the receptacle.

DTX 016 3:12-29



DTX016 Fig. 1



DTX016 Fig. 6

Invalidity: '150 Patent Based on *Obviousness*

22. The improvement of claim 15, wherein the splash shield is of sufficient mass to retain the vessel within the holder during relative movement of the mixing element and vessel in opposite directions.

assuming additional parts can be considered for "sufficient mass"

'150 Patent, Claim 22:

Claim Limitation	Disclosed in Neilson + Kelly + Miller
22. The improvement of claim 15, wherein the splash shield is of sufficient mass to retain the vessel within the holder during relative movement of the mixing element and vessel in opposite directions.	